

Message

From: Jane Hoppin [jahoppin@ncsu.edu]
Sent: 4/10/2020 6:52:10 PM
To: Adrien Wilkie [aawilkie@ncsu.edu]; Collier, David [collierd@ecu.edu]; Detlef R. U. Knappe [knappe@ncsu.edu]; DeWitt, Jamie [DEWITTJ@ecu.edu]; Katlyn May [kmay2@ncsu.edu]; Lea, Suzanne [LEAC@ecu.edu]; Lindstrom, Andrew [Lindstrom.Andrew@epa.gov]; Nadine Kotlarz [nkotlar@ncsu.edu]; Rob Smart [rcsmart@ncsu.edu]; Strynar, Mark [Strynar.Mark@epa.gov]; group-jh_lab_genx@ncsu.edu; Andrew R. Binder [arbinder@ncsu.edu]; Dylan Wallis [djwallis@ncsu.edu]; dmreif@ncsu.edu; Richardson, David B [david.richardson@unc.edu]
Subject: GenX Exposure Study Update
Attachments: 4-9_GenX newsletter 2 mockup.pdf; fayetteville_water_report_back_letter_FINAL.docx; individ_results_complete_FINAL.docx

Hi everyone!

I hope you are doing well and hunkering down. I wanted to give everyone an update about what we've been doing while we're the GenX Study at home version. First some updates and then some time for discussion.

While we're tabling plans for field work until the fall or winter, we're busy getting organized to write papers and get back in the field when it's safe to do so.

Report Back:

We're planning to share the well data with our Fayetteville participants later this month. We're waiting for IRB approval on these final letters (attached). We'll sort out how to have some type of virtual meeting to discuss these with the community. Maybe videos, maybe zoom, etc. If you have ideas on how best to do this, please let Marisa Incremona know.

Newsletter:

We'll be sending out the newsletter (attached) in May, once the water results letters are mailed out. Let us know if you have suggestions for the next one. This one is IRB approved, so no changes to this one. The newsletters go to all study participants and will be posted on our website.

GenX Study Website:

We're going to update this as we move on to creating a larger cohort <https://genxstudy.ncsu.edu/>. Please take a look and give Marisa any feedback about it. Once we have some mockups of our new website, we'll give you a chance to give us this feedback.

Chemical Analyses:

Right now everything is on hold while the MS are turned off. Once we get back up and running, we hope to finish up most of the samples.

Blood samples: We'll be analyzing the Fayetteville ones at EPA, along with ~100 samples from people from Wilmington collected before the water changed. These data will give us some good estimates of the past and, if GenX was ever detectable in the serum of residents. Theresa Guillette from Scott Belcher's group is helping us with these analyses.

Urine samples: These are on hold as well, but we hope to analyze these at EPA on the new EQAN SPE system.

Wristband samples: We have these data in hand and Claire Critchley is working on the paper.

Dust samples: These are currently stored and awaiting a plan for analysis. So, if you have a student who might be interested, let us know.

Papers:

The news on the **blood paper** is that it is awaiting Editor's Decision at EHP. That was on April 3, so hopefully we'll celebrate soon.

Thyroid disease: Caitlin Cassidy has been working on an analysis of hypothyroid disease and PFAS among women in the Wilmington cohort. The draft is almost ready for co-authors. My thinking is that all of the original investigators will be given the option to be co-authors, and if you choose not to be we will include you in the acknowledgements.

Water paper: Nadine is going to take the lead on a paper describing the water data from both Wilmington and Fayetteville. She reanalyzed all the Wilmington water data on the new method with a full suite of analytical samples, so we can describe the exposures in a consistent way. We can share the outline in the next few weeks.

Predictors of PFAS in blood: There's a lot of interest in this topic and Adrien Wilkie is taking the lead at tackling this complicated paper (11 PFAS, 100+ possible predictors) so it's taking a while to wrangle the analytical plan into shape. Right now, we're starting with the Wilmington data, but hopefully we can include the Fayetteville data as well. This paper will be an excellent resource to future data analysts. Once it has more shape, we'll be happy to include others in our discussion.

Fingerprints of PFAS in blood: Dylan Wallis is trying to tackle methods that allow us to see if we can create meaningful aggregate measures of PFAS in blood. Right now, we're trying to do similar methods to those being done in CO by John Adgate's group, so we can compare. The CO group is more interested in source apportionment than toxicology, so our paths may diverge at some point. But right now it helps us all get up to speed and is an effort that is part of the PFAS UNITEDD grant that Detlef and I are a part of.

Wristbands as exposure markers: Claire Critchley is taking the lead on writing this up. Wristbands were collected from ~90 people in Fayetteville in Feb 2019 and then the samples were analyzed by Heather Stapleton's lab at Duke for PFAS (pg/g levels) and other semi-volatile chemicals (ug/g levels). We also have results for 30 non-Fayetteville residents; we do not see PFAS in this group. In our study participants, we detect GenX on many of the wristbands. Still trying to sort out what this means, but suggests a potential source in the home. Claire will be presenting an abstract at the ISES meeting in Oakland in September (if it happens).

Those are the major papers happening now. We're also looking at the liver enzymes and lipids to see if there's an association with PFAS. We're trying to evaluate the quality of self reported well information, which will be useful for larger efforts.

We have a lot of data and we're working hard to get the data clean and available for people to use. We have developed a data request process so that we can keep track of projects and the data associated with it. If you have a research idea, please reach out. The data are most valuable when they are published. We also have some small bits of samples if you have a burning idea.

Current Grants and Future Plans

Superfund was funded at the end of February. We have funds to follow 1000 people (600 Wilmington, 400 Fayetteville). This will double our current cohort and we'll expand to Brunswick county and work with community folks there to help us recruit. Like everything, plans are on hold for field work, but we're working on questionnaire design, recruitment materials, etc. So we can be ready to go when it's safe to do so. We'll probably have an investigator meeting to discuss in May.

As a result of COVID 19, NIEHS is encouraging supplements to existing grants to study how the environment impacts COVID 19. Given that PFAS are immunotoxic, it might be timely for us to try and pursue some additional funding to answer those questions. If you are interested in this topic and discussing a potential supplemental grant application, please let me know and we'll try to have a conversation in the next couple of weeks. I will sort out how we do supplements to Superfund.

Research to Action Grant is due in early December. I've been thinking about this a little bit and trying to see how we can use it to expand the GenX study upriver and to include a larger sample. Currently I'm thinking of 4 aims:

1) health survey in the impacted communities along the Cape Fear. Some kind of statistical random sample so we can identify whether there are non-cancer outcomes associated. I'm interested in this because the prevalence of thyroid dz and respiratory symptoms and asthma are much higher in our sample than the general population. Is this just a volunteer bias or some long term impact of PFAS? A larger sample size will help answer some of those questions.

2) exposure modeling to predict PFAS levels over time. Leverage data from the PFAS Testing network, the previous blood samples, etc. This would allow us to use the health survey to predict differences in exposure over time. I would also like to collect blood samples from a group of people upriver (Pittsboro + Burlington) so we can use that data to develop our models,

3) work with communities to prepare materials to distribute, ask an expert, active communication and materials development, community meetings, and

4) develop materials to educate health care providers about PFAS and health effects. Let me know your thoughts and whether you might be interested.

Report back evaluation: We've been kicking around for awhile, some kind of project that allows some formal evaluation of our report back materials, tests out new ones, compares what we've been doing to what others are doing with PFAS report back. We've been discussing with John Adgate at Univ of CO about something to compare our two R2Is...right now, we're up to our eyeballs, but we've identified the RFA for this ... so we will come back to that at some point.

Other things in the works. We're still waiting to hear about 2 CHHE pilot projects: one focusing on cytokines and PFAS and response to drinking water borne microbial agents, another to create a resource to look at PFAS levels across the globe over time and space. There's probably more.

That's what we're up to. If there are specific topics of interest, let me know and I'll be sure to pull you in on those conversations.

Be well, safe and happy.

Jane

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Jane Hoppin, ScD
Deputy Director, Center for Human Health and the Environment
Professor, Department of Biological Sciences
University Faculty Scholar, NC State
CB 7633
North Carolina State University
Raleigh, NC 27695

919-515-2918 (office)

jahoppin@ncsu.edu

<http://jahoppin.wordpress.ncsu.edu/>

ORCID: 0000-0001-8456-0969